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FROM:

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DATE:

Feb 10, 92

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Including Cover Sheet

COMMENTS:

① FOR YOUR INFO AS
REQUESTED

② COPY TO Dan Peters, AGCC Seattle
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1261812

To: Steve Rinella, Smith & Monroe & Gray Engineers

From: Dan Keppen, Klein Consulting Engineers

Date: February 10, 1992

Re: Ash Grove Cement West Seattle

The following information relates to thrust blocking concerns for the pump discharge line at Ash Grove Seattle. You indicated previously that the proposed above-ground pipe segment (with associated supports) will not be constructed as originally planned. Assuming that minor changes in alignment may have also occurred since the original layout, the following table provides minimum bearing areas at various fittings for thrust block installation.

BEARING AREA OF THRUST BLOCK IN SQ. FT.
FOR 14-INCH DIAMETER PRESSURE PIPE

<u>Fitting</u>	<u>Area</u>
45 degree Bend	8.9
22 1/2 degree Bend	4.6
11 1/4 degree Bend	2.3



The bearing areas shown above are based on test pressure of 150 psi and an allowable soil bearing stress of 2000 lbs per square foot. To compute bearing areas for different soil bearing stress, multiply the above result by the ratio 2000/soil bearing stress. While the anticipated system pressure is much less than 150 psi, we feel it is safe to design for this value in order to provide a safety factor against potential operating surges.

Other notes:

1. Concrete thrust blocking to be poured against undisturbed earth.
2. Keep concrete clear of joint and accessories.
3. Minimum 2000 psi concrete

Please call if you have any questions.